CHAPTER FIVE: UTILITIES AND PUBLIC SERVICES

NOTE: An asterisk (*) denotes text material adopted by Thurston County as the joint plan with Olympia for the unincorporated part of the Olympia Growth Area. The joint plan also includes the unincorporated part of Map 5-1--Utilities.

SECTION I: PUBLICLY-OWNED UTILITIES AND SERVICES

Background

Olympia's future and its ability to achieve sustainability will be influenced by how we design, finance, and deliver public services to the community.

This chapter discusses the major issues relating to public services and defines broad goals and policies to guide them. The public services discussed include utilities (water, sewer, solid waste, and stormwater), television cable service, fire protection, police protection, and schools.

Achieving sustainability challenges us to shift our focus from short-term "end of the pipe" approaches, toward long-term approaches that emphasize prevention, community participation, and resource conservation, both fiscal and environmental.

For example, the storm and surface water utility not only manages existing runoff, but also works to reduce runoff and impervious surfaces. The water utility not only provides water, but also works to protect water quality and conserve water supplies. The solid waste utility picks up garbage, but also picks up recycled materials and encourages waste reduction through educational programs. Police protection programs continue to respond to disturbances but also work to reduce them through neighborhood watch programs and community-oriented policing.

Along with how urban services are provided and financed, Olympia's future will be shaped by where they are provided and how they are phased in. For most of the public services discussed in this chapter, the appropriate entity has adopted or is preparing a more detailed functional plan to guide the design and daily administration of its public services. This chapter is a bridge between those plans and the City of Olympia Comprehensive Land Use Plan.

The following goals and policies are generally applicable to all utilities:

POLICIES FOR ALL CITY UTILITIES

GOAL PF1*. Develop utility and land use plans cooperatively to ensure that the suggested land uses are feasible and that utilities can be provided and maintained for future land uses.

POLICIES:

PF 1.1* Infill development shall be encouraged to ensure that urban land densities are achieved.

PF 1.2 When property owners outside the city but inside the Urban Growth Area request City utility service, they will be required to annex or sign a binding agreement to annex when requested by the City.

PF 1.3* Construct water, sewer and stormwater utilities in and to areas where their construction will achieve the community development, environmental protection, and resource protection goals of this plan, consistent with adopted utility plans and extension policies.

PF1.4 The City should maintain up-to-date detailed maps and utility data showing the location of all city utilities and their capacity, and identifying any known or potential constraints (i.e., environmental or fiscal).

PF 1.5 Olympia should establish a minimum level of service standard for each of its utilities.

PF 1.6* Utility services should be timed and sized to provide services to the future

population and associated land uses defined by this plan, and to avoid expensive and remedial action.

PF 1.7 Expansion of utility services should not reduce service levels for current users.

PF 1.8 Where utilities do not meet minimum level of service standards, necessary improvements should be made. Utility capital improvement programs should give priority to improving existing systems having significant inadequacies.

PF 1.9 Coordinate public utility functions for drinking water, sewer, storm and surface water, and solid waste. Methods of coordination could include: joint billing, enhanced code enforcement, integrated public information materials, and coordinated capital facilities planning.

GOAL PF2.* To develop and manage efficient and cost-effective utility systems, with costs which are fairly shared.

POLICIES:

PF 2.1 New development should pay for itself and the City should routinely review new development charges (e.g., general facility charges or impact fees).

PF 2.2 Utility services should be paid for by the users. (See also PF 13.4 for an exception.)

PF 2.3 Olympia should set utility rates which are fair and equitable and reflect the utility's goals.

PF 2.4 Olympia should continue special rates for low income senior and disabled utility customers.

PF 2.5 The City should carry out an adequate maintenance schedule for all facilities.

PF 2.6 The City should regularly review and update its comprehensive utility (functional) plans and work toward conducting integrated reviews of any plans in order to encourage integrated utility planning.

PF 2.7 The City will annually implement and update its capital improvement plans.

PF 2.8 Underground placement of new utility lines should be required. Underground replacement of existing above-ground lines along arterials and collector streets where substantial new development is occurring is a highly desirable goal. The City should work with property owners and utility companies in implementing this policy.

PF 2.9* Olympia and Thurston County should coordinate the scheduling of capital improvements among utility systems both internally and with other jurisdictions (e.g., Lacey or Tumwater).

PF 2.10 Whenever practical, utilities should make joint use of utility rights-of-way. Underground utilities should be grouped together and easily accessible for maintenance, repair, and additions.

PF 2.11* Work with neighboring jurisdictions to provide regionally-coordinated utility systems for those urban services which benefit from a regional approach.

PF 2.12 The City should continually revise and keep up-to-date its development policies manual to give more detailed guidance on how utility services should be delivered and paid for in accordance with the principles established in this Comprehensive Plan. This manual should at least address water facilities, sewer facilities, stormwater facilities, street improvements, frontage improvements, and other development-related facilities and improvements.

PF 2.13 Olympia should ensure that adequate funds can be generated to maintain the adopted levels of urban utility service and utility capital improvement programs for the City's utilities and to provide for future needs as determined by land use planning.

PF 2.14 Olympia should maintain favorable bond ratings for the City's utilities by fiscally-responsible management practices.

GOAL PF3. To provide utility customers educational programs that empower them to

participate in utility planning and in achieving the utilities' long range goals.

POLICIES:

PF 3.1* Encourage community participation in the development and implementation of long range utility plans.

PF 3.2 Provide commercial and residential customers with incentives and assistance which may include: financial incentives, retrofit programs, and market-based incentives. Programs should be oriented to public utility planning goals, regulatory compliance, and policy-making activities.

PF 3.3 Olympia shall provide its utility customers educational programs that promote resource conservation, sustainability, and personal responsibility as they relate to utility services.

PF 3.4 Sponsor education, participation, incentives, and technical assistance programs and activities. These will be evaluated for effectiveness and coordinated with other utility activities, and with other jurisdictions.

WATER

Background

A clean and dependable supply of water is essential to Olympia's future. Every day, the City of Olympia delivers seven million gallons of water to more than 40,000 customers. Once used, most of this water ends up at the LOTT treatment plant where it is treated as sewage. Thousands of gallons of water also move through natural conduits that carry water to our region's wetlands, lakes, rivers, and streams.

This Section defines goals and policies that govern how we manage Olympia's water supplies. The primary focus of Olympia's water services is not only to deliver water, but to sustain our water supplies. This requires us to look into the future and define a road map to protect, deliver, and conserve water supplies. Strategies to achieve this, and an associated financing plan, are described in more detail in the City of Olympia's Water Comprehensive Plan which is updated every six years.

Sustaining Water Supplies

New water is not made. The water we use today has been around for millions of years, moving through the hydrologic cycle. Communities throughout the world harvest different parts of this cycle. Many communities get their water from rivers. Some villages in Chile harvest clouds. Olympia harvests groundwater which comes from rain and runoff that seeps into the ground and is captured by layers of sand, gravel, and silt, called aquifers. Our reliance on groundwater challenges us to protect the watersheds that feed into our aquifers. We also must ensure that our water withdrawals do not affect future supplies for water customers, lakes, streams, and other surface waters that are replenished by groundwater.

These challenges are being met. The City is developing wellhead protection plans and a water conservation plan, increasing its water quality monitoring, and participating in land use decisions and development standards affecting water supplies. They are influenced by the values of the Olympia community, state and federal regulations, and basic environmental principles.

Water demands are driven by population size, how water is used, and fire protection requirements. In addition to serving average customer water demand, the system must also provide adequate volume for fire protection. Similar to the LOTT treatment plant, which must be built to service peak wet weather flows that do not represent average conditions, state laws require the water system to be built to serve peak demands (defined by water use and fireflow requirements).

Olympia's service area boundaries are defined by the Thurston County Coordinated Water System Plan and the Urban Growth Area (see Chapter Four, Urban Growth Management and Annexation). The service area extends to the urban growth area boundary and also includes several noncontiguous parcels. It includes Tanglewilde and Thompson Place in east Lacey, the Evergreen State College, and the City of Lacey.

A series of wells, pumps, reservoirs, and transmission lines supplies water to Olympia's customers. As the system ages and Olympia grows, continual upgrades are required to maintain existing services and serve new growth. Most of the water Olympia delivers is pumped from McAllister Springs, stored at Meridian reservoir, and then carried to the rest of the distribution system by one 36" pipe. Supplemental water sources include wells at Allison Springs, Shana Park, and Hoffman. Allison Springs is a primary water source for Olympia's Westside. The other wells

are primarily used during peak demands when water from McAllister Springs must be supplemented.

Olympia's long-range strategies and associated policies reflect the need to integrate water conservation into the development of future water supplies, to protect and maintain the quality of our water, and to continue to work cooperatively with other local jurisdictions to manage the region's water resources.

Water Facility Needs

The water supplied to Olympia is the highest of quality and is, at the moment, found in great abundance. The Water Utility has always and continues to deliver safe, clean water to the community. Four key influencing factors drive the development of the nine water capital project programs identified in the Capital Facilities Plan (CFP). They are:

- Regulations/Compliance: Federal Safe Drinking Water Act (SDWA) and Washington State Department of Health (DOH) regulation; Uniform Fire Code (UFC) fireflow criteria.
- Adopted Sustainability Philosophy: To manage the water in sustainable ways and develop integrated solutions that solve more than one problem at a time.
- Growth: Accommodating the growth defined by Olympia's Comprehensive Plan and continuing to provide service to existing customers.
- Meet recommended operational and system delivery strategies established in the 1994 Water Comprehensive Plan update: To manage water as a limited resource, recognizing the components of the water cycle; meet water regulation objectives using approaches that limit human influence on the naturally good quality of water Olympia now has; and implement water zone re-structure system changes for cost-effective delivery.

The City is divided into six water pressure zones. Water pressure within these zones, with the exception of some locations on the west side of the City, meets the needs of customers. The CFP identifies projects which are required to provide basic system improvements to meet storage demands, distribution supply requirements, and domestic and commercial fireflow pressure.

The CFP projects will be financed through grants, state Public Works Trust Fund loans, proposed bond sales, the General Facilities charge (GFC), and the existing utility rate. Water Utility rate increases will be required to fund the proposed CFP. For more details on these projects see Volume Three, the Capital Facilities Plan.

Level of Service Determinations

Water capital facilities are designed and built to provide citizens on the system with clean, safe drinking water in adequate supply. Water capital program activities recognize managing the water as a resource in the water cycle. Furthermore, the activities recognize that the resource needs to be protected, conserved, and managed responsibly.

Level of Service 1. This first level of Service (LOS) involves maintaining the current system as is, and addressing the need to keep in regulatory compliance for water quality and quantity requirements.

- Minimal standards are met for water pressure (30 psi) and UFC fireflow criteria is met for a majority of system customers.
- Non consideration at LOS I is given for growth-related projects or projects anticipating future regulatory compliance.
- When growth has occurred, or new regulations for water delivery take effect, LOS I results in an automatic system deficit.

Level of Service II. The second LOS goes beyond system maintenance and existing regulatory needs.

- LOS II anticipates future water quality regulations and develops facilities that will accommodate the increased requirements prior to the system's being in deficit.
- LOS II goes beyond the required minimum of 30 psi average water pressure for residents and strives to improve the average of 65 psi. The higher standard is the most cost-effective approach to anticipating and meeting system growth needs. As well, LOS II strives to eventually eliminate areas within the system that do not meet UFC fireflow criteria.

Level of Service III. The final LOS recognizes Olympia's commitment to Sustainability and to the approach of managing water as a limited resource. LOS III projects and programs address DOH

regulations to a further extend, with the underlying drive being a responsible water purveyor.

? Though within current water rights, the City of Olympia can meet growth demand through the year 2015. Olympia's system currently depends on 80% of its supply from one source. Programs to seek additional sources and diversify the sources are LOS III programs.

? To comply with DOH regulations, there must be some form of conservation activity within an adopted Water Plan. The degree to which Olympia approaches a conservation program (decreasing demand by 10% by the year 2001) is a component of managing a limited resource.

LOS I

McAllister Springs Wellhead Protection
Water Treatment
Meridian Storage for Treatment
Storage Repairs and Replacement
Public Works Trust Fund
Conservation
Replace Small Diameter Water Piping
System Upgrades and Connection Replacements

LOS II

Meridian Storage for Growth
Boulevard Road Storage
Small Water Projects with Oversizing
Water Transmission Distribution Systems Improvements

LOS III

McAllister Springs Wellhead Protection
Conservation
Water Source Development (avoid filtration)

GOALS AND POLICIES

GOAL PF4.* Protect, preserve and enhance groundwater resources through proactive, aggressive measures such as watershed and wellhead protection programs as appropriate and comprehensive monitoring that is coordinated with other regional efforts.

POLICIES:

PF 4.1* Protect groundwater from land uses and activities that would reduce water quality and quantity.

PF 4.2 Land use permit processes should ensure that negative effects on groundwater quality are avoided or mitigated.

PF 4.3* Create management and monitoring strategies that acknowledge the physical linkage between surface water and groundwater and that emphasize prevention and control of pollutants at the source.

PF 4.4* Cooperate with other local jurisdictions and affected interests to solve groundwater quality and quantity problems on an aquifer-wide basis.

PF 4.5* All divisions of local governments should consider the impact of their activities upon groundwater.

PF 4.6 When necessary, Olympia should buy land or development rights if there is property that must be kept undeveloped to protect a vulnerable ground or surface water resource.

PF 4.7 Work to implement the goals of the Thurston County Groundwater Plan, the Thurston County Department of Health wellhead protection regulations, regional wellhead protection policies and locally- developed wellhead plans.

PF 4.8* Participate in the intergovernmental regional groundwater program.

(Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.9* Work with other jurisdictions to maintain and support financially, as resources allow, a coordinated water quality and water quantity monitoring program through the Thurston County Regional Ground Water Program. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.10* Participate in regional collection management of data through the Thurston County Regional Ground Water Program. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.11* Provide technical assistance and education, to the extent resources allow, in designated wellhead protection areas to small businesses, industries and residents regarding proper storage, handling and disposal of hazardous materials. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.12* Encourage through education and technical assistance the use of safer, less hazardous products and the reduction of hazardous materials. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.13* Participate, as resources allow, in planning and collaborative training and the implementation of regional spill response in designated wellhead protection areas. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.14* Consider methods to mitigate the risk from commercial hazardous materials transportation through designated wellhead protection areas when doing transportation planning for new transportation corridors. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.15* Consult with the appropriate regional transportation planning agencies and neighboring jurisdictions prior to establishing prohibitions of transportation corridors for commercial hazardous materials transport. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.16* Provide, as resources allow, local information to the existing data management program within the Department of Ecology to develop and maintain an underground storage tank database for commercial underground storage tanks. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.17* Coordinate the environmental review with other jurisdictions when a development proposal is within a designated wellhead protection area. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.18* Work together with other jurisdictions to coordinate educational programs to provide a basic wellhead protection message and work with community groups and private parties to incorporate this message whenever possible. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.19* Encourage the Thurston Conservation District Board and others to continue their voluntary efforts on education, conservation planning, and installation of best management practices on existing farms, golf courses, parks, schools, and other facilities which use pesticides and fertilizers in designated wellhead protection areas. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.20* Promote the use of integrated pest management, reduction of pesticide use, and reduction of fertilizers used by the City and growth area residents, businesses, and other governmental agencies in designated wellhead protection areas. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 4.21* Encourage the Ground Water Policy Advisory Committee and the Solid Waste Advisory Committee to discuss and coordinate activities and programs related to ground water protection and local hazardous waste management. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

GOAL PF5.* Provide adequate supplies of water for future needs while protecting instream flows and reducing the need for future investments in new or expanded capital facilities.

POLICIES:

PF 5.1* Water system planning should be sensitive to the impact of water policy on instream flows that are important to the propagation of fish and wildlife.

PF 5.2* Reserve water supply rights for at least 50 years in advance of need, so that supplies can be protected from contamination or commitment to lower priority uses.

PF 5.3* Implement water conservation measures as a means of sustaining water resources and meeting future demands. Such measures could include:

a. A conservation-oriented rate structure;

b. Revised plumbing code to require low-water-use fixtures;

c. A community-wide conservation education program; and

d. Promotion of low-water-use landscaping and low-water-use irrigation systems for home and garden use.

PF 5.4 Olympia should consider the use of non-structural alternatives to meeting demands, such as reuse of water.

PF 5.5 Olympia should encourage multi-jurisdictional approaches to water rights and source development.

PF 5.6* Establish multiple sources of water supply, in order to enhance the reliability of the system. These sources should be geographically dispersed.

PF 5.7* Encourage and allow reuse techniques and reclamation of waste water where water quality can be protected. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

PF 5.8* Participate in regional planning to address loss of domestic drinking water supply. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

GOAL PF6. Provide adequate transmission, distribution and storage facilities to meet City needs and state and federal regulations.

POLICIES:

PF 6.1 Main sizes and storage reservoirs should be designed to meet fire flow needs as well as domestic supply needs.

PF 6.2 Olympia should design its water supply system to achieve the most favorable practical fire insurance rating, consistent with the City's adopted service levels.

PF 6.3 Main sizes in newly developing areas should be designed to serve future growth as well as immediate needs.

PF 6.4 Adopt a satellite water systems policy that would allow City utility service and management in adopted service area locations that may not yet be served by the central water system.

PF 6.5 Olympia's Water System Comprehensive Plan shall establish the standards for development and improvement of the water system, including:

a. Main sizes required on all existing city streets;

b. Main sizes required outside the City limits in those areas served by City water;

c. Main sizes and approximate locations for future distribution mains in areas where public streets do not presently exist;

d. Location and construction standards for all waterworks facilities (wells, pump stations, mains, reservoirs, etc.); and

e. Such other information as may be deemed necessary by the City Council or Public Works Department.

f. The Water System Comprehensive Plan should be updated as needed to maintain the adopted minimum levels of utility service.

PF 6.6 The water supply system should be protected from contamination introduced through the distribution system. Implementation of a realistic, well-managed cross-connection control system for new and existing system users will help realize this goal.

GOAL PF7.* Practice integrated and regional approaches to water resources management and planning activities.

POLICIES:

PF 7.1* Olympia and Thurston County should continue to coordinate with Lacey and Tumwater to assure adequate water supplies throughout the urban area following the provisions of the Public Water System Coordination Act and the adopted Thurston County Coordinated Water System Plan of January 1986, as may be amended.

PF 7.2 Coordinate with LOTT and the stormwater utility to manage these potential water resources.

PF 7.3 Private water companies that build systems within Olympia's future service area should be required to build to Olympia's standards so that in the future the systems can be integrated.

PF 7.4* Support reconsideration of the Coordinated Water System Plan boundary, to bring it into conformance with the Urban Growth Management Boundary.

PF 7.5* All water system operators should be encouraged to enhance service reliability, and to enhance their ability to respond quickly to accident, disaster, or source loss.

PF 7.6* Encourage interjurisdictional water resource management committees to consider wellhead protection during the development of their annual work programs. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

GOAL PF8.* To allocate costs of water service in an equitable manner.

POLICIES:

PF 8.1* In general, the costs of new water mains and related facilities should be charged to the new developments requiring them.

PF 8.2* The costs of system-wide improvements should be shared by all water system users.

PF 8.3 When private water systems fail to meet State regulations and their customers are required to hook up to Olympia's water system, the hook-up costs should be paid by those customers.

PF 8.4 A development policies manual should set policies on issues including but not limited to:

a. Equitable allocation of costs and billing mechanisms (e.g., latecomer fees) for oversizing of mains or related facilities;

b. Equitable allocation of costs of system-wide facilities to new users, as reflected in hook-up fees;

c. Service to areas outside the city limits;

d. Temporary service connections; and

e. The role of water service availability in preliminary plat review.

SEWER

(Ordinance #5757, 12/16/97)

Background

Proper wastewater management is essential for protecting public and environmental health. Sewage collection, treatment and disposal mechanisms are critical components of our community's infrastructure. As the Olympia area population grows, the City faces substantial wastewater management challenges. The Wastewater Treatment Facility is nearing capacity. Large storms can cause sewer system overflows and backups. Older sewer lines are deteriorating and subject to ground water infiltration. The continued use of the septic systems in Olympia's increasingly urban environment creates public health and water quality concerns. The City will address these wastewater management challenges so that public and environmental health are protected in the short and long term, and so that sewer service is provided in a reliable, economical and sustainable manner. Community members will be informed of sewage issues and invited to participate in policy development and decision making. The strategies to achieve this are presented in the City of Olympia 1997 Sewage Disposal Master Plan.

In addition to the Olympia Sewage Disposal Master Plan, City sewage policies are guided by the Thurston County General Sewerage Plan, and the County-City agreement dated October 12th, 1992, implementing this plan, and the Intergovernmental Contract for Wastewater Facilities Management. General direction for the sizing and location of major sewer interceptors comes from the March 1989 General Sewer Plan for the Interceptor, Treatment and Disposal System. These documents set policies and boundaries for Olympia and Thurston County with regard to sewer extensions and service provision. The policies state that the cities are to be the primary service provider for sewer throughout the County. No sewers will be provided outside the urban growth area except to correct ground water problems or threats to public health.

Olympia manages its own sewage collection system, which serves over 12,000 residences and businesses. The collection system is composed of 146 miles of gravity sewer pipe, 14 miles of pressurized sewer line, 4,069 manholes, 31 lift stations, and 500 Septic Tank Effluent Pump (STEP) systems. Older sewer lines that also collect stormwater are referred to as combined lines. These combined lines are concentrated in Olympia's downtown area.

The City collection system transmits sewage to the LOTT Wastewater Treatment Facility (WWTF), located in downtown Olympia. The WWTF is owned by the regional LOTT Partnership, which includes the cities of **L**acey, **O**lympia, and **T**umwater, as well as **T**hurston County. The Olympia Public Works Department manages the WWTF for the LOTT Partnership. On average, Olympia sewers currently transmit 7.25 million gallons of wastewater to the LOTT WWTF daily. The amount of wastewater varies greatly depending on the amount of stormwater entering the system. In 1996, the December daily average was 12.6 million gallons, which compares to the August average of 4.88 million gallons per day.

The capacity of the current treatment plant is expected to be used up between the years 2001 and 2003, given existing growth projections for the LOTT service area. The LOTT Partnership has embarked upon an aggressive planning process and action agenda to ensure adequate capacity for the next twenty years. The strategy is three-fold:

1. Manage Inflow and Infiltration (I&I): Reducing I&I flows, where it is cost effective, can provide additional capacity at the LOTT facility. Inflow is the discharge of stormwater into the sewerage system. Infiltration is the leakage of groundwater into sewer pipes through cracks and breaks in those pipes.

   Based on the 1994 Gibbs and Olson Sewer I&I Study developed for the LOTT Partners, Olympia has planned to reduce its level of I&I that was determined to be cost effective. Cost effective I & I is removal that costs less than adding new capacity to the system. A plan to remove I&I from West Olympia is currently underway. The goal of I&I is a reduction of 8.28% or expenditure at $8.7 million whichever occurs first. The work is scheduled to be complete by 1999. Olympia has made a commitment to not allow I & I levels to increase above 1995 levels.

2. Flow Reduction: Reducing per capita water consumption will reduce the amount of water sent to the treatment plant and thus restore reserve capacity. The LOTT Partners and the

City of Olympia have set a goal through the 1996 Water Conservation Plan, which includes pilot projects, to reduce wastewater flows, such as promoting the use of low-flow toilets. LOTT is committed to providing financial assistance to local water conservation efforts which will reduce wastewater flows and help finance water conservation projects that are cost effective. LOTT is also investigating actions which the Partners can undertake collectively such as side sewer replacement programs to reduce infiltration.

3. Facilities Planning: Even with conservation and flow reductions, growth projections for the LOTT Partnership will require the addition of new treatment facilities. The LOTT Partners are developing a Wastewater Resource Management Plan to comprehensively evaluate the alternatives, financing, and scheduling for providing new treatment capacity. The plan must be submitted to the Washington State Department of Ecology no later than June 30, 1998.

In addition to the sewer system, numerous Olympia area residents treat their sewage on-site with septic tank systems. In 1997, approximately 4,000 septic systems are in use in the Olympia sewer service area. These individual on-site sewage systems are independent of the City sewer system, but require oversight to assure that they are functioning properly. On-site septic systems (OSS) are an acceptable means of sewage treatment and disposal if they are properly designed, installed, maintained, and kept at sufficiently low densities. Septic system abandonment and sewer connection is mandatory if a system fails and sewer service is available.

The City has developed a septic management program, in conjunction with Thurston County, to monitor ground water, educate septic users, and track septic development. The City will monitor ground water quality in areas of high risk of contamination and dense OSS development. These areas are identified in the Septic Systems Assessment Project Report. Septic systems will adequately treat sewage only if they are properly maintained. The Thurston County Operational Certificate Program is presently being evaluated. Once the evaluation has been completed, Olympia will work cooperatively with Thurston County to design and implement a registration campaign. This campaign will need to educate septic users why maintenance and program registration are important.

County and City policies require many new developments to use community on-site systems (COSS). Large community on-site systems are considered interim facilities and must be designed for conversion to sewer system. Once installed, the City becomes the owner of large COSS and is responsible for their maintenance.

Sewer Facility Needs

Based on current information, the City's sanitary sewer collection system is generally in fair to good condition. However, better information on the exact condition of sewer system components needs to be gathered. Olympia's 1997 Sewage Disposal Master Plan identified the need to gather better information on the condition of the City's sewer facilities and to improve the management of that information. The Sewage Disposal Master Plan recommends a new sewer condition rating system and a sewer data management study. The implementation of these recommendations will enable the City to better plan and prioritize future sewer capital facilities projects.

Capital improvements consist of repairs, replacements, upgrades, and additions to the existing sewer system. The CFP projects will be paid through General Facilities Charges, latecomer fees and Utility rates.

The need for extending sewers to the City and UGA residents still on septic tanks will be determined by a septic monitoring project beginning in 1998. The strategy is to monitor ground and surface water for problems associated with on site sewage disposal systems. The City will respond to identified problems, and the response may include requiring existing septic owners in a particular area to connect to sewer and extending sewer lines to unserved areas.

The Level of Service (LOS) of sewer collection system components is presently based upon two criteria: pipe capacity; and inflow and infiltration. Pipe capacity is determined on the size of individual sewer lines. Some lines in the system flow at maximum capacity or more (surcharge) due to inadequacy of line size and the presence of inflow and infiltration. Surcharge is the flow in a sewer line above its maximum design capacity. Inflow and infiltration is the flow of uncontrolled waters into

sewer lines. Inflow and infiltration can be a symptom of structural defects within the sewer system, and can significantly reduce collection system and treatment facility capacity. The precise LOS flow rate to measure over-capacity and/or I&I to evaluate the need for an individual CFP project varies from project to project. The evaluation depends on the age, location, and upstream and downstream demands placed on a pipe.

Level of Service I - This first LOS represents maintaining existing system conditions. Pipes' flows exceed design capacity. There is frequent surcharging in sewer pipes. Backups of sewage into structures occurs. High levels of I&I are present in the system.

Level of Service II - This second LOS represents improved sewer capacity flows and reduced I&I. Surcharged conditions are reduced to manageable levels. Backups of sewer into structures is minimal, and I&I conditions are reduced.

Level of Service III - This third LOS represents the desired optimum service level. Surcharging of sewer pipes and backups do not occur. I&I is eliminated except in areas where there are combined sewer/stormwater systems. In this case, the only I & I removal will be that which Olympia has committed to or that which is determined to be cost effective by LOTT and financed by LOTT.

POLICIES FOR SEWER SERVICE

GOAL PF9.* To assure proper disposal of sewage in order to protect public health and maintain safe drinking water.

POLICIES:

PF 9.1 Future sewer system plans should be designed to protect and enhance Olympia and Thurston County's ground and surface water resources as the highest priority. The cities should provide sewers to protect our region's aquifer sensitive and wellhead protection areas in accordance with the 1997 Sewage Disposal Master Plan, and the Thurston County Sewerage General Plan. (Ordinance #5757, 12/16/97)

PF 9.2 Olympia should cooperate with the Thurston County Health Department to help minimize any duplication of design standards, while achieving adopted Sewerage General Plan goals and policies.

PF 9.3 All future urban growth shall:

a. Be developed on sewers, including Septic Tank Effluent Pump (STEP) systems, or (Ordinance #5757, 12/16/97)

b. Have systems designed to be efficiently converted to future sewer use (such systems might include group septic systems, dual plumbing with dry-line sewers, or the like), or

c. Use managed individual on-site septic systems and community systems at low densities, provided that soil conditions will support their use until sewers are available.

PF 9.4 Olympia should expand its groundwater monitoring program efforts in a manner that is consistent with the County's monitoring program. This will allow both early detection

of threats to our region's aquifer and design of appropriate actions to protect it.

PF 9.5 Existing development within the sewer service area served by on-site systems should be required to use public sewers in the event of irreparable system failure or determination of water quality degradation. Where sewer collectors are not yet available, property owners will be required to repair on-site systems to City and Health Department standards. Availability and timing of sewer extension should be considered when choosing an acceptable design to achieve environmental standards and minimize duplication of capital investment. (Ordinance #5757, 12/16/97)

PF 9.6* Design and construction flexibility should be employed to allow service for isolated unsewered areas, while maintaining appropriate technical standards and sufficient control for the ease of long-term maintenance of the system.

PF 9.7 Sewer lines which are not combined with storm sewers should be maintained or repaired to prevent leakage into groundwater and surface waters, as well as to prevent excessive infiltration into the system and placing unnecessary strains on treatment plant capacity. Any removal of existing or future infiltration would follow a determination of cost effectiveness by the LOTT Technical Advisory Committee, and the cost would be borne by LOTT. (Ordinance #5757, 12/16/97)

PF 9.8 Periodic inspections and pumping of septic systems should be required.

PF 9.9*The owners of all on-site sewage systems shall be encouraged to register with the Thurston County Operational Certificate Program so system function and maintenance are monitored, and so septic systems may be connected to sewer service when necessary. (Ordinance #5861, 12/15/98; Resolution 11866, 12/21/98)

PF9.10 Community on-site sewage systems (COSS) will be permitted if all of the following conditions are met:

PF9.10* Community on-site sewage systems (COSS) will be permitted under the following conditions: (Resolution 11866, 12/21/98)

a. Topography or other physical constraints preclude connection to municipal sewer.

b. COSS users agree to pay the City a monthly maintenance fee.

c. COSS users agree to connect to the municipal sewer and properly abandon the COSS within one year of sewer becoming available. COSS users agree to pay up-front all expenses for sewer connection, including the general facilities charge, the reserve capacity charge and a late-comer fee, if applicable.

d. The cost of extending the City collection system exceeds the cost of COSS installation and lifecycle costs by 50%, based on an engineering cost index comparison as approved by the City.

e. System design is approved by the City Engineer. (Ordinance #5757, 12/16/97)

GOAL PF10. To clean up Budd Inlet and southern Puget Sound in the most economical and environmentally safe way possible.

POLICIES:

PF 10.1 Olympia should keep its commitment to remove I&I. (Ordinance #5757, 12/16/97)

PF 10.2 Olympia supports research and experimentation with new sewage treatment and disposal technologies, such as graywater systems, composting

toilets and advanced on-site treatment systems. (Ordinance #5757, 12/16/97)

GOAL PF11.* To efficiently develop and manage our sewer system.

POLICIES:

PF 11.1 Encourage infill development and the phased expansion within the UGA, where practical of the area served, since compact systems are less expensive to build and maintain. (Ordinance #5757, 12/16/97)

PF 11.1* Encourage infill development and the phased expansion, where practical, of the area served, since compact systems are less expensive to build and maintain.(Resolution #11866, 12/21/98)

PF 11.2* Olympia and Thurston County should continue to be responsible partners in LOTT.

PF 11.3 The City should implement an adequate maintenance schedule for all facilities, and upgrade deteriorating parts of the system as a high priority, and strive for efficiency in operations. (Ordinance #5757, 12/16/97).

PF 11.3* The City should implement an adequate maintenance schedule for all facilities, upgrade deteriorating parts of the system as a high priority. (Resolution #11866, 12/21/98).

PF 11.4* Water conservation should be pursued as a way to reduce waste flows, minimizing future facility costs and environmental impacts.

PF 11.5* Generally, new sewer line and pump station construction is to be privately financed by the users of the facilities. When the City contributes to the financing of new sewer collection facilities, future users of the new facilities will repay the City through general facilities charges or latecomer fees. The City will participate in the financing of new sewer facilities only under the following circumstances:

a. The City may contribute funds in a public/private partnership to oversize sewer extensions to accommodate additional capacity. The City may also contribute funds for upgrading of existing lines to handle additional capacity required by sewer extensions.

b. The City may fund sewer extensions in conjunction with other public works projects such as transportation overlays or water line extensions. This maximizes efficiency in the provision of utility services and minimizes the number of times an area is disturbed to provide these services. When an overlay project is planned for an unsewered area, the City Council will decide on a case by case basis whether to also extend sewer. Alternate cost options for sewer facilities will be considered, and the potentially affected public will be notified.

c. The City may fund sewer extensions to areas determined to constitute a present or potential threat to public health or water quality, when the continued use of on-site sewage systems is determined to be a contributing factor. The determination of whether to extend sewer will consider the cumulative impact of septic system infill development. Problem areas will be identified through ground water monitoring and nitrate loading analysis.

d. The City may fund a sewer extension as an exception to these policies if unforeseen circumstances require the provision of sewer service to an area to address a problem. Special circumstances for publicly funded sewer extension will be reviewed on a case by case basis by the Director of Public Works Department and the City Council.

e. To the extent possible, the City should try to recover its costs through latecomer fees, local improvement districts, etc. (Ordinance #5757, 12/16/97) (Resolution #11866, 12/21/98)

GOAL PF12. To use sewer facility planning as a means of accomplishing land use, environmental, economic development, and growth management goals.

POLICIES:

PF 12.1 The phasing of interceptor construction and City sewage collection system capital facilities projects should address the following goals in order of priority:

a. To protect ground and surface water.

b. To meet sewer deficiencies of existing populations and businesses.

c. To encourage infilling.

d. To direct future growth. (Ordinance #5757, 12/16/97)

PF 12.2 The City should investigate basing sewer rates on volume to encourage conservation by system users. (Ordinance #5757, 12/16/97)

PF 12.2* Sewer rates should be based on volume to encourage conservation by system users. (Resolution #11866, 12/21/98)

PF 12.3 Olympia should provide sewers to growth areas within the City as a higher priority than extending them farther out, except to correct sewer deficiency problems.

PF 12.4 Sewer service planning should be designed to promote infilling and not create urban sprawl.

PF 12.5 The City of Olympia should maintain a workable sewer system comprehensive plan, updating it at appropriate intervals.

GOAL PF13.* To allocate costs of sewer service in an equitable manner.

POLICIES:

PF 13.1* New development should pay its fair share costs of providing sewer service to new development through the general facilities or other charges. (Ordinance #5757, 12/16/97, Resolution #11866, 12/21/98)

PF 13.2 Existing rate payers should help pay some of the costs of providing sewers to protect our aquifer in proportion to how they benefit to correct deficiencies to protect the aquifer. (Ordinance #5757, 12/16/97)

PF 13.3 Olympia should support efforts to protect aquifer sensitive areas. (Ordinance #5757, 12/16/97)

PF 13.4 Septic system users within an aquifer protection district should help pay a share of the costs of extending sewer service and monitoring groundwater quality of the aquifer for aquifer protection to correct deficiencies. (Ordinance #5757, 12/16/97)

STORMWATER MANAGEMENT

Background

Rain. Olympia gets a lot of it. For example, the daily amount of rain received by Olympia in an average storm is 45 percent more than Tacoma, 50 percent more than Seattle, and 85 percent more than Everett. This high intensity rainfall leads to problems in stormwater runoff, especially in the urban area of Thurston County.

Development on the land typically reduces its ability to absorb rainfall. Forested areas absorb a lot of rain before the rivers gradually start to rise. Their soils are like a sponge, and the trees and undergrowth

absorb and transpire a lot of water. In farming areas, the natural condition has been changed some, but the soils and plants still absorb a lot. In suburban areas, more of the land's surface is covered by roof and pavement, and a typical lawn is more compacted than natural turf. In dense urban areas, buildings and pavement are everywhere. None of the rainfall is absorbed; it all becomes runoff immediately. Decorative planting within commercial areas slightly mitigates the drainage problems, as well as enhancing the appearance of these areas.

The peak flow and the total volume of stormwater steadily climb as an area urbanizes. In a way, it's like a flash flood as urban stormwater enters streams at a rate that erodes banks and destroys fish habitat. Also, the natural storage capacity of wetlands has often been reduced by filling.

Today's wetlands practice is no longer to channel runoff immediately into streams, lakes, wetlands or Puget Sound. Stormwater management now seeks to retain stormwater on site or in regional holding ponds for delayed release to streams or slow infiltration into the groundwater. But stormwater quantity is only part of the problem. We now know that stormwater quality must also be addressed.

Urban stormwater is typically a major source of surface water pollution. Pollutants can include suspended solids, nutrients, bacterial or viral contamination, and toxic chemicals. Toxic materials often found in urban runoff include lead, cadmium, mercury, organic solvents, and oils from roadways and parking lots. This problem can be made worse when, through ignorance or "midnight dumping," citizens or businesses pour or spill toxic substances into storm drains, or onto areas that drain into storm drains. Surface water pollution can cause groundwater pollution too.

By 1981, we were facing problems here in northern Thurston County that we could no longer ignore. Localized flooding had become chronic. Salmon spawning areas were being damaged. Kids could no longer swim in Capitol Lake, and health officials were shutting down shellfish beds. One of the major culprits: urban stormwater. Since drainage patterns ignore city limits, Olympia, Lacey, Tumwater, and Thurston County had to face these problems together. The Public Works Departments of the four jurisdictions analyzed these issues and began to take steps to correct deficiencies.

We have come a long way since then by working together on common problems and developing common solutions. Studies in the early 1980's identified the need for comprehensive drainage basin planning, joint capital facilities planning, adequate maintenance of stormwater facilities, and more stringent design standards for new development. Studies also identified the need for dedicated funding for stormwater management, and recommended the formation of stormwater utilities to adequately fund the effort.

In 1986, the Olympia City Council approved an interim rate structure for the stormwater utility based on flat rates for all properties. Subsequent studies established the justification for a permanent rate structure that was adopted in 1990. The permanent rate structure consisted of a flat rate for all residential parcels, and a variable rate for nonresidential parcels that was based on the amount of impervious or hard surface present on the property.

This new rate structure funded a comprehensive and effective approach to stormwater management. Key program elements included drainage basin planning, capital facilities design and construction, operation and maintenance of the city's stormwater system, effective public involvement and education, water quality monitoring and pollution source control programs, and development of more stringent design standards and policies including a regional drainage design manual.

In 1992, after completion of two important drainage basin plans and a basin reconnaissance report, we had a good idea of what structural and nonstructural solutions were needed to address the multitude of problems identified in these plans. We not only focused on the well-known problems of flooding, but also on problems related to water quality degradation and habitat loss in our streams, lakes, wetlands, and Puget Sound.

The City Council approved a second rate increase to expand Olympia's stormwater management program. Comprehensive efforts can now be made to control, manage, and treat stormwater runoff as well as protect, restore, and enhance our community's surface and groundwater resources. Enhanced public involvement and education, technical assistance, code enforcement, development review, water quality and habitat monitoring, operations and maintenance, and capital facility design and construction will be just some of the strategies employed to achieve these goals.

The City will also be working very closely with others to achieve these goals. The close working relationship shared by Olympia, Lacey, Tumwater and Thurston County is recognized throughout the Puget Sound region as one of the most effective regionally-coordinated stormwater management programs. Our efforts have paid off, and will continue to pay off, as we identify joint problems and share resources to cost-effectively solve our stormwater management problems.

GOALS AND POLICIES

GOAL PF14.* To minimize flooding, surface and ground water degradation, and aquatic habitat loss associated with stormwater runoff. (Ordinance #6140, 08/28/01)

Refer to Policies 4.1 to 4.18 in the Environment Chapter. (Ordinance #6140, 08/28/01)

GOAL PF15.* To maintain an effective stormwater management program. (Ordinance #6140, 08/28/01)

Refer to Policies 3.1 to 3.6 in the Environment Chapter. (Ordinance #6140, 08/28/01)

GOAL PF 16.* Ensure that the Storm and Surface Water Utility meets Federal, State, and Puget Sound wide expectations and standards. (Ordinance #6140, 08/28/01)

POLICIES:

PF 16.1 Adopt and maintain a stormwater management plan which complies with the applicable requirements of the Washington Department of Ecology and the Puget Sound Water Quality Management Plan. The stormwater management plan should include the following provisions: (Ordinance #6140, 08/28/01)

a. Comprehensive stormwater management policies and objectives. (Ordinance #6140, 08/28/01)

b. Requirements for stormwater controls for new development and redevelopment.

c. A capital facilities plan and funding program that includes provisions for habitat enhancement and acquisition. (Ordinance #6140, 08/28/01)

d. Operation and maintenance programs for new and existing public and private stormwater systems including storm drains, detention systems, ditches, and culverts.

e. Education programs to inform residents, businesses, and industries about stormwater and its effects on water quality, flooding, and fish and wildlife habitat, and to discourage dumping of waste material and other pollutants into storm drains.

f. An assessment program to identify, rank, and correct significant pollutant sources and their relationship to the drainage system and water bodies. (Ordinance #6140, 08/28/01)

g. A water quality response program to investigate sources of pollutants, and respond to citizen complaints or emergencies such

as spills, fish kills, illegal storm drain hookups, dumping, and other water quality problems. Identify and retrofit existing development as needed. (Ordinance #6140, 08/28/01)

h. Inspection, compliance, and enforcement measures.

i. Water quality and habitat monitoring. (Ordinance #6140, 08/28/01)

j. Growth management planning and interlocal coordination with neighboring jurisdictions including local coordinate agreements within watersheds. These may include interlocal agreement, joint programs, consistent standards, and regional boards or committees to address state and local requirements. (Ordinance #6140, 08/28/01)

k. Assurance of adequate local funding for the Storm and Surface Water Utility. (Ordinance #6140, 08/28/01)

l. An implementation schedule. (Ordinance #6140, 08/28/01)

PF 16.2 Olympia shall maintain and implement a Drainage Design and Erosion Control Manual and ordinance which address the following elements:

a. Erosion control.

b. The design, operation, and maintenance of storm drainage facilities.

c. Best Management Practices (BMPs) for stormwater management.

d. Regulations for wetland management.

PF 16.2.3* Incorporate requirements for enhanced protection of wellhead areas when storm water drainage manuals and ordinances are revised. (Resolution #11589, 12/15/97, Ordinance #5757, 12/16/97)

SOLID WASTE MANAGEMENT

Background

Olympia no longer simply collects trash from households and businesses and hauls it to the landfill for disposal. Olympia manages waste as a resource. It is a resource that creates jobs, diversifies the local economy, protects the environment and creates a sustainable future for our citizens.

Olympia's approach to waste management has made the City a national leader in the move away from a natural-resource-based economy toward one that meets its material needs with goods it has already produced. The City's waste reduction, recycling and market development initiatives now serve as models for other communities, catalyzing new programs around the country.

In Washington State, Olympia is one of only a handful of cities that still provides solid waste collection services with municipal crews. This has allowed the City to implement programs to bring the community closer to realizing the full potential of waste reduction and recycling to improve the local economy and the environment. For example, the City Council has set the City's garbage rates to encourage and reward residents who reduce and recycle their waste. This, combined with the availability of convenient programs like the City's curbside recycling and yard waste collection, has proven to be a potent combination in motivating residents to recycle and reduce.

Olympia meets and exceeds both the spirit and the letter of the many pieces of solid waste legislation enacted at the state and federal level. The most significant piece of state legislation that affects Olympia is the Waste Not Washington Act passed in 1989. It requires cities and counties throughout the state to implement aggressive waste reduction and recycling programs including curbside recycling programs in urban areas. More recent legislation requires that cities provide multifamily complexes the opportunity to recycle and that local governments establish "buy recycled" policies and goals.

Olympia is a member of the Thurston County Solid Waste Advisory Committee (SWAC) and actively participates in regional solid waste planning activities. The County is currently updating its Solid Waste Management Plan. Olympia, along with all the other local jurisdictions in Thurston County, decided to draft the Plan jointly with the County. As a result, many regional waste reduction programs have recently been implemented or are recommended in the Plan including a regional system of recycling drop stations, educational programs for local schools, technical assistance programs for businesses, semi-annual community clean-up days and Christmas tree recycling opportunities.

The Plan recommends the development of a long-term disposal system that Olympia supports. The system calls for building a transfer station to consolidate refuse collected in the County for shipment to a large regional landfill in Eastern Washington. The transfer station operator will be required to separate at least 10 percent of solid waste arriving at the facility for reuse and recycling. This additional diversion of material from the waste stream is over and above the material already covered for recycling and reuse through existing curbside and other recycling programs. The plan also directs local governments to continue to research and evaluate new disposal technologies as they become available. If they are cost-effective and environmentally sound, we should integrate them into the system.

All of the solid waste collected in Olympia by municipal crews is disposed of at the Thurston County landfill located at Hawk's Prairie. Olympia recognizes that landfill space is a scarce and valuable resource. The City's solid waste management and recycling programs and policies were implemented in an attempt to conserve landfill space. The programs established by the City and other local jurisdictions to recycle and reduce waste will allow us to minimize how much refuse we export for disposal.

There are other important reasons for conserving landfill space and expanding recycling and waste reduction. At both the state and federal level, legislation governing the construction and operation of landfills has dramatically increased the local cost of disposal. As a result, it now costs more to manage waste as trash than to recycle it, even without including other difficult-to-quantify benefits of waste reduction and recycling programs such as energy savings and pollution reduction. The long-term trend is for disposal costs to continue to rise and recycling costs to drop as markets mature and the volume of material collected and processed grows.

Olympia also helped draft the Thurston County Moderate Risk Waste (MRW) Plan which was adopted by the incorporated jurisdictions in Thurston County in 1990. The MRW Plan, required by state law, is intended to guide the management of the relatively small quantities of hazardous waste generated by small businesses and households. Generators of large quantities of hazardous waste are regulated by the State. As the MRW Plan is implemented, the opportunities for Olympia and Thurston County residents and businesses to safely manage toxic waste are expanding. Today, the County operates a hazardous waste collection site at the landfill and used oil collection sites are now open countywide. One important goal of the MRW Plan was to reduce the quantities of hazardous waste generated in the County. To achieve that goal, the MRW Plan recommended the implementation of educational and technical assistance programs.

They include school programs that use puppets to teach kids about alternatives to pesticides. There are also programs that help small businesses find less-toxic substitutes for some of the hazardous products they may use.

In 1989, Olympia formed its own Solid Waste Advisory Committee (SWAC). The committee was formed to more directly involve the community in solid waste planning efforts. The Olympia SWAC now has 11 members representing a cross section of the community. The SWAC provides citizen input in solid waste management planning. It educates residents on solid waste management issues and the impacts of new programs on the community. It develops recommendations on solid waste management issues, policies and programs for the City Council. It assists in soliciting community support for and participation in recycling, waste reduction and other solid waste projects and programs. Finally, the SWAC helps build a customer advocacy group for recycling and waste reduction programs. Many of Olympia's current programs originated as Olympia SWAC recommendations.

The Olympia SWAC also played an important role in shaping the future of regional solid waste management programs by actively participating in the drafting of Thurston County's Solid Waste Management Plan update. Olympia SWAC members reviewed the County Plan and developed recommendations for the Olympia Council on important waste management issues. These include long-term disposal, recycling and waste reduction and special and hazardous waste programs.

Olympia now provides a wide variety of recycling and waste reduction programs. Waste reduction--reducing the amount and toxicity of waste--is the City's number one waste management priority. To promote waste reduction, the City provides educational and technical assistance to residents and businesses and has adopted its own waste reduction policies. Waste reduction programs provided by the City include "Dirt Works," the region's backyard composting demonstration garden. The Dirt Works site, located at Yauger Park on Olympia's westside, is staffed by volunteer Master Gardeners and Composters. It now hosts more than 50 classes a year on a wide range of composting and gardening topics. In 1993, the City launched its compost bin distribution program at Dirt Works, providing free and low-cost composting bins to residents who complete a composting workshop.

The City has assisted the Olympia School District in implementing successful recycling and waste reduction programs. It is home to Captain Waste Not, a recycling superhero who crusades against wasteful habits at schools and community events.

In 1988, Olympia implemented its residential curbside recycling program. By 1997, more than 95 percent of Olympia households were enrolled in the program.

In 1989, Olympia opened its Yard Waste Drop-Off site. By 1998, the site was open every Saturday from March to December. In 1994, the City expanded its curbside recycling program to service multifamily accounts and began a convenient curbside collection service for yard waste. By 1998, more than 35 percent of the City’s residential customers have signed up for the curbside yard waste service. All of these programs combined helped the City achieve a 50 percent residential recycling rate in 1997.

In 1998, the City implemented a bold and innovative approach to providing residential solid waste and recycling collection service. The new approach is designed to reduce costs, expand recycling opportunities, and reduce the risk of injuries to the City employees who collect refuse and recyclables in Olympia. To reduce costs, the City changed the frequency of its residential collection service. Instead of picking up garbage and recyclables weekly in 1998, the City began collecting garbage one week

and recycling the following week using the same trucks and staff. The new trucks the City used to make this change can hold a lot more material than the City's current recycling collection vehicles. With the new trucks, the City added new materials--all plastic bottles, aerosol cans, aluminum foil, and pie tins--to its curbside recycling program. To accommodate the new materials and to account for the reduced frequency of collection, residential customers were provided with new larger recycling carts. To reduce the risk of injury to the collection staff, the City provided residential customers with recycling and garbage carts that can be dumped with an automated arm. The collectors roll the recycling and garbage carts to the front of the truck and an automated lifter will dump the carts. This reduces the risk of injury to the collection staff because they will not have to do the heavy work of lifting anymore--the machinery will do the work for them

The City also has a strong commitment to recycling market development. In 1989, the City adopted a comprehensive waste reduction, recycling and recycled product procurement ordinance to guide City operations. The City now uses recycled paper almost exclusively, uses rerefined motor oil in its fleet, recycles and buys recycled asphalt and concrete, recycles antifreeze and oil filters, recharges laser cartridges and batteries and much more.

Other market development initiatives include publishing a guide to recycled products for use by local businesses, and advising local businesses on substituting recycled materials for virgin materials in manufacturing. Olympia is also working closely with the Thurston County Economic Development Council and the Port of Olympia to attract businesses that manufacture with recycled materials to locate in the Thurston County area as part of a regional market development group called REDAC, the Recycling Economic Development Action Committee.

The future of solid waste management remains uncertain, but promising. Olympia's progressive and cutting-edge initiatives to reduce costs and expand recycling and waste reduction opportunities are helping to put us - and by example helping the rest of the nation - on the path toward a more sustainable future, enhancing our environmental, social, and economic well-being. (Ordinance #5861, dated 12/15/98)

GOAL PF 17. To manage solid waste to realize its full potential for environmental, economic and social benefits.

POLICIES:

PF 17.1 Manage waste as a resource to create jobs, diversify the local economy, protect the environment and create a sustainable future for its residents.

PF 17.2 Actively involve the community in solid waste planning through the Olympia Solid Waste Advisory Committee and other community involvement and outreach efforts.

PF 17.3 Work in partnership with the Thurston County Economic Development Council, the Port of Olympia and other economic development and business groups to improve local recycling markets by assisting existing manufacturing industries to use recycled materials and by recruiting new recycling manufacturing plants to the area.

PF 17.4 In accordance with City Ordinance 5141, continue to expand City use of recycled products with the highest available post-consumer content and promote the use of recycled products by local businesses and residents.

PF 17.5 Integrate solid waste management programs with other City and community services where practical to address other community needs, e.g. affordable housing and unemployment.

GOALS AND POLICIES

PF 17.6 Follow the solid waste management hierarchy established in federal and state legislation, which sets waste reduction as the highest priority management option followed by reuse, recycling and responsible disposal.

PF 17.7 Continue to encourage residents and businesses to reduce and recycle through differential rates, educational and promotional programs and other initiatives.

PF 17.8 Expand, when it is practical and feasible, recycling and waste reduction programs to maximize the diversion of material from disposal into remanufacture.

PF 17.9 Actively support the Mission Statement of the Thurston County Solid Waste Management Plan, which reads:

The mission of the Thurston County 1992 Solid Waste Management Plan is to significantly reduce the waste stream, emphasize recycling and recovery, and establish Thurston County as a center for waste reduction and recycling activities; further, to provide environmentally sound waste management that identifies the most effective use of economic resources in full compliance with the goals, objective and spirit of the Waste Not Washington Act of 1989.

GOAL PF 18.* To manage solid waste in a responsible and cost-effective manner.

POLICIES:

PF 18.1 Provide integrated, efficient and economical solid waste management services in a manner that encourages and promotes waste reduction and recycling.

PF 18.2* Working together with other local jurisdictions, manage the Thurston County landfill as a scarce and valuable resource, and make every effort to manage our waste at home.

PF 18.3* Solid waste management planning should be coordinated regionally.

PF 18.4 New sites and methods of reducing, reusing, recycling and disposing of solid wastes should be continually explored.

GOAL PF19: To minimize the environmental impacts of solid waste management.

POLICIES:

PF 19.1 Handle and dispose of solid waste in ways that minimize land, air and water pollution and protect public health.

PF 19.2 Work to ensure that the operations of the Thurston County landfill at Hawk's Prairie are in compliance with state and federal regulations and are responsibly managed.

PF 19.3 Protect air, land, and water resources from pollution from the use, handling, storage and disposal of hazardous materials and substances.

a. Following the provisions of City Ordinance 5141, reduce City use of hazardous materials and safely manage, recycle and dispose of toxic products used in City operations.

b. Continue to participate with other local jurisdictions in the implementation of Thurston County's Moderate Risk Waste and Solid Waste Management Plan.

TELEVISION CABLE

Background

Our rapidly changing society is entering a new era: the Information Age. For most people, television has become their primary source of information about the world and their community. Over the last decade, television has entered a new phase of development with the rise of cable service. With cable service, subscribers in communities on the fringe of signal areas can enjoy perfect reception. More significantly, they can get vastly expanded programming including the possibility of a local access station to provide community news and entertainment. This approach is possible because cities and counties have the authority to grant franchises to cable companies for placement of their lines in the public right-of-way. In exchange for granting this privilege, local governments may require cable companies to provide certain services. The Olympia franchise agreement sets out these services which include the following: The company must provide service throughout the City, and put the cable underground for new construction. The company must meet minimum standards for the number of channels provided, variety of programming, quality of customer service, and technical quality of signal transmission.

Two-way lines must be installed to various public locations to allow programs to originate there. The locations include City Hall, the County Courthouse, the State Capitol Campus, South Puget Sound Community College, The Evergreen State College and the Washington Center for the Performing Arts.

The future will bring further improvements in cable technology. For example, some day we may be able to communicate both directions on a cable network. Therefore, the franchise agreement calls for such "interactive" capability to be provided when it becomes technically and economically feasible. Similarly, the agreement provides that the city's schools, medical facilities, police and fire stations, library, and other major public buildings will some day be interconnected.

The City has also taken on a significant oversight role with its new agreement. It has the authority to make sure the cable company provides a high quality of service.

Local governments typically charge a franchise fee to fund administration of such agreements and respond to consumers. Part of the franchise fee goes to support a local public access television channel. This public access channel is perhaps the most exciting aspect of our new era in local cable service.

The public access channel is operated on contract by a local non-profit organization, Thurston Community Television (TCTV). The channel is for non-commercial use only. TCTV provides a studio, equipment, and training for users, with an emphasis on local programming.

Scores of local organizations and agencies make use of this community resource. They include neighborhood associations, churches, school districts, public interest groups, the Chamber of Commerce, performing arts organizations, sports organizations, and state and local government agencies.

With the advent of local access to the television cable, Olympia's citizens have opportunities like never before to share local news and events. The Information Age has arrived.

GOALS AND POLICIES

GOAL PF20. To provide a high quality of television cable service to all of Olympia's citizens.

POLICIES:

PF 20.1 Cable service should incorporate the latest features and improvements as they become technologically and economically feasible.

PF 20.2 All parts of Olympia should have access to cable service.

PF 20.3 The City should ensure that any cable franchisee provides a high quality of customer service, programming variety, and signal transmission.

GOAL PF21. To use advances in television cable technology to improve communications to and from public buildings.

POLICIES:

PF 21.1 Cable service to major public buildings should allow programs to originate there as well as to be received there.

PF 21.2 Cable service to schools, medical facilities, police and fire stations, libraries, and other major public buildings should allow intercommunication among them as such capabilities become technologically and economically feasible.

GOAL PF22. To provide a high quality of local access programming on the television cable service.

POLICIES:

PF 22.1 The City should ensure that cable service includes one or more local access channels which are responsibly and fairly administered in the public interest.

PF 22.2 Policy for administration of local access channels shall be established by the Community Television Plan.

PF 22.3 Administration of local access channels should emphasize opportunities for programming of local interest, such as:

a. Locally produced programs by organizations or individuals working with video, film, slides, or live performances or interviews; or

b. Educational programs for credit and/or for training purposes, or public meetings by local educational bodies; or

c. Public meetings sanctioned by governmental bodies, teleconferences, and training programs by governmental bodies.

For additional policies relating to television cable facilities, see the Privately-Owned Utility Facilities section of this chapter, below.

SCHOOLS

Background

Schools are among the most important public facilities our society provides for its citizens. Not only are they the centers of learning for our children, they are also important focal points for all kinds of neighborhood activities. (In the Parks and Open Space Chapter, we note the importance of their play fields, ball fields, and gymnasiums.) Their libraries and auditoriums often serve as neighborhood meeting places. The health and vitality of a neighborhood school is invariably a clear indicator of the health and vitality of the neighborhood itself.

The City has a modest role to play in school planning. Public schools are operated by local school districts and governed by state and federal laws and regulations. State funds provide the bulk of school finances. Some funds come from the Federal government. School districts raise the rest from local property taxes. State laws set standards for service levels and facility development, such as site size and enrollment. They also specify funding methods. These laws thus perform much of the role of a functional plan for schools. School districts themselves do the remaining tasks of planning.

Nevertheless, there are important things the City can do. Through good planning, we can see to it that the environments around existing and future school sites are conducive to their needs. We can take into account the safety needs of school children, and also the need for school buildings to be appropriately accessible to their service areas. We can see to it that when large developments are proposed, school sites are dedicated as needed. We can certainly

continue to work closely with school officials to serve our citizens together.

In addition, the Growth Management Act requires cities and school districts to cooperate in capital facility planning. Future school sites are among the types of "lands needed for public purposes", which must be identified somewhere in a city's comprehensive plan. If a school district is to collect impact fees for new schools, they must be reflected in the city's Capital Facility Plan (CFP). In fact, the CFP in this Plan does include the facility needs of the Olympia School District (see Volume Three, the Capital Facilities Plan).

Olympia is served by Olympia School District No. 111, a district with two high schools, four middle schools, and twelve elementary schools. A small part of the eastern most part of the city is also served by North Thurston School District No. 3.

GOALS AND POLICIES

GOAL PF23.* To enhance the strength and vitality of our neighborhood schools.

POLICIES:

PF 23.1* Land use decisions should take into account the needs of schools, such as pedestrian safety and a quiet environment conducive to learning.

PF 23.2 Elementary schools should be centrally located in their service areas on a site allowing children to walk safely to school, and on or convenient to a neighborhood collector street to minimize the impact of school bus traffic.

PF 23.3 Middle schools should be centrally located in their service areas, and on or convenient to a neighborhood collector or major collector to minimize the impact of school bus traffic.

PF 23.4 High schools should be easily accessible to vehicular as well as pedestrian traffic because of the traffic generated by student drivers, school personnel, and interscholastic events. They should be located on arterials or major collectors. A central location within each service area also is desirable but less important than for elementary or middle schools.

PF 23.5* New residential developments should take into account the impact they may have on school capacity. If a development is large enough to generate the need, one or more school sites should be dedicated.

PF 23.6 City and school officials should build further on their cooperative relationship. Consideration should be given to joint planning, which could include prioritization of sites for future school construction, and preservation of historic sites.

PF 23.7 School officials should be encouraged to retain existing neighborhood school locations, because of the importance of the school in maintaining a strong, healthy neighborhood.

PF 23.8 City and school facilities should be shared for neighborhood parks, recreation, and open space uses.

PF 23.9 Work with the Superintendent of Public Instruction, the Olympia School District, and the Legislature to develop new school site standards that are appropriate for urban settings.

PF 23.10 The City and the Olympia School District should jointly develop a plan for sharing and programming school sites for common activities.

SECTION II: PRIVATELY-OWNED UTILITY FACILITIES

The 1990 Washington State Growth Management Act requires that all comprehensive land use plans include a utilities chapter. According to the Act, the utilities chapter shall, at minimum, consist of "the general location, proposed location, and capacity of all existing and proposed utilities, including but not limited to, electrical lines, telecommunication lines and natural gas lines."

The County-Wide Planning Policies adopted by the County and cities in 1992 include the following policy related to private utilities:

> "Thurston County and cities and towns will...provide capacity to accommodate planned growth by ensuring that each jurisdiction will have adequate capacity in...private utilities...to serve growth that is planned for in adopted local comprehensive plans."

Most of these private utilities are regulated at the state level by the Washington Utilities and Transportation Commission (WUTC). The WUTC ensures that safe and reliable service is provided to customers at reasonable rates. The commission regulates the rates and charges, services, facilities, and practices of most of Washington's investor-owned, gas, electric and telecommunication utilities.

Virtually all land uses require one or more of the private utilities discussed in this chapter. Growth in residential, commercial, or industrial development requires increased utility services which in turn means more or expanded utility facilities. Local land use decisions effect density, driving new utility needs. In other words, private utilities follow growth. Expansion of the utility systems is a function of the demand for reliable service that people, their land uses, and activities place on the systems.

BACKGROUND ON PRIVATE UTILITY PROVIDERS

In Olympia, private utilities are provided by the following companies:

Electricity

The Puget Sound Power & Light Company, commonly called Puget Power, is the only provider of electricity to Olympia and its urban growth area. Puget Power is an investor-owned utility serving nine western and central Washington counties.

Unlike some other private utilities of electricity, like Puget Power, must provide electricity upon demand and in accordance with "tariffs" on file with the WUTC. In order to fulfill its public service obligations, Puget Power must plan to extend or add to its facilities when needed.

Natural Gas

Washington Natural Gas (WNG) is the only natural gas provider to Olympia and its urban growth area. WNG is an investor-owned utility serving customers in five Western Washington counties.

As regulated by the WUTC, natural gas is not considered a necessity like electricity is; rather it is a utility of convenience. Customer hookup to the distribution system is determined by the WUTC. WNG is a demand driven utility and as such is prohibited from passing the cost of new construction on to the existing rate base. As driven by demand, WNG installs service for new construction and conversion from electricity or oil to natural gas.

Telecommunications

Unlike electricity or natural gas, the telecommunications industry is currently in the midst of tremendous advances in technology. Many new providers have entered the market and provide options that create a very competitive environment in the telecommunications arena. These factors make it very difficult to accurately assess the way in which future telecommunications will be provided.

Standard Telephone Service

The only provider of standard telephone service in Olympia and its urban growth area is US WEST Communications (USWC), a subsidiary of US WEST. USWC is an investor-owned corporation offering telecommunications services to customers in 14 states. US WEST is not a long distance carrier.

As regulated by the WUTC standard telephone service is considered a necessity and therefore, US WEST must provide phone facilities on demand. As communities grow, facilities are upgraded to ensure adequate service levels. Facilities are also upgraded with new technology to make additional services available.

Cellular Telephone Service

The Federal Communications Commission (FCC) regulates cellular providers in each cellular geographic service area. In Olympia and its urban growth area, there are two FCC licensed cellular phone providers: US West Cellular, a subsidiary of US West Inc., and Cellular One, a subsidiary of McCaw Cellular Communications.

At the state level, Cellular One and US West Cellular are both regulated by the WUTC. Although cellular technology is increasingly used as a reliable backup communication system during times of emergency, for example during natural disasters, the WUTC defines cellular technology similarly to natural gas, that is, as a utility of convenience, not necessity. Therefore, cellular phone providers are not required to provide service upon demand. Cellular phone service is expanded in a given area either by extending the coverage to new areas or by increasing the capacity of the system within the current service area.

Cable Television

TCI Cablevision is the only cable TV provider serving Olympia and its urban growth area. Currently, cable companies are not regulated by the state as a private utility. Cable companies are regulated by local governments and the FCC. Each year TCI engineers assess the need for system expansion. TCI is currently continuing to provide hook-up to customers as demand rises.

This subsection addresses TV cable facilities. For more discussion of public service on the TV cable, see the Publicly-Owned Utilities and Services section above.

GOALS AND POLICIES

GOAL U1.* To promote cooperation and coordination between jurisdictions in private utility planning.

POLICIES:

U 1.1* Olympia and Thurston County will coordinate with each other and with the cities of Lacey and Tumwater on private utility planning to achieve consistency in regulations and long range plans which promote efficient and effective provision of utility services.

U 1.2* Olympia and Thurston County will coordinate with and cooperate with each other and with the cities of Lacey and Tumwater in the planning and development of multijurisdictional private utility facility additions and improvements.

U 1.3* Decisions made regarding private utility facilities must be consistent with, and complementary to, regional demand and resources and shall reinforce an interconnected regional distribution network.

GOAL U2.* To promote cooperation and coordination between the City and private utility providers.

POLICIES:

U 2.1* The City and County will coordinate their utility planning activities with the private utility providers. The City and County will work with the private utilities to achieve consistency between the facilities plans of private utilities and their own regulations and long range plans.

U 2.2* The City and County will retain copies of Puget Power's long range system

improvement plan entitled GMA Electrical Facilities Plan for Thurston County, March 1993. This plan, including descriptions, maps, and inventories of existing, in progress, and future facilities is incorporated by reference into this utilities chapter of the Comprehensive Plan for Olympia and the Olympia Growth Area.

U 2.3 The City will exchange information with the private utilities on current and projected figures for population, employment, development, and utility service demand in order to appropriately provide for private utility service to a growing population.

U 2.4* The City and County will process permits and approvals for private utility facilities in a fair and timely manner and in accordance with development regulations that foster predictability and help ensure reliable private utility service.

U 2.5* The City and County will work with the private utilities when developing policies which affect private utility service and activities. Some examples of areas where private utility input on policies should be solicited include, but are not limited to, street excavation, street obstructions, and fees.

GOAL U3.* To promote the undergrounding of utility distribution lines.

U 3.1* In order to minimize visual clutter and the obstruction of views, new private utility distribution lines of utility providers should be placed underground wherever practical, based on sound engineering judgement, on consideration of health and safety, and in accordance with the regulations and tariffs of the WUTC. For example, when building new roads, all private utility distribution lines should be installed underground.

U 3.2* In order to minimize visual clutter and the obstruction of views, the undergrounding of existing private utility distribution lines, in accordance with the regulations and tariffs of the WUTC, should continue to be encouraged. For example, existing overhead distribution lines should be converted to underground lines as part of major road widenings.

U 3.3 The City will coordinate the undergrounding of both new and existing private utility lines consistent with policies U 3.1 and U 3.2.

U 3.4* Utility undergrounding requirements should apply to all public and private development projects.

GOAL U4.* To promote the co-location of utility corridors and distribution and communication facilities.

POLICIES:

U 4.1* Wherever feasible, promote the co-location of new utility distribution and communication facilities when doing so is consistent with utility industry practices and national electrical and other codes. Examples of facilities which could be shared are trenches, rights-of-way, towers, poles, and antennas.

U 4.2* Provide timely and effective notice to all affected private utilities of all road construction, including the maintenance and repair of existing roads, in order to promote the joint planning and coordination of public and private utility trenching activities.

GOAL U5.* To minimize adverse impacts of above-ground utility facilities on surrounding land uses.

POLICIES:

U 5.1 Private utility facilities should be located near compatible adjacent land uses. City regulations will specify that approval of new private utility facilities shall be reasonably compatible with the development of the surrounding properties.

U 5.2 City regulations in its Zoning Code will include standards that ensure that new private utility facilities shall be coordinated and integrated with surrounding land uses so as to be reasonably compatible with the natural or built environment. These regulatory standards shall encourage facility design which minimizes the visual intrusion of facilities in all areas.

U 5.3* Encourage telecommunication utilities to use existing structures, such as existing towers and buildings, where feasible.

GOAL U6. To ensure that new telecommunication carriers are appropriately reviewed at the local level.

POLICIES:

U 6.1 When applications for City permits and/or licenses for new telecommunication providers are reviewed by City staff, the Federal Communications Commission's (FCC) coordinator for the Olympia area shall be included in the review if reasonably feasible.

GOAL U7.* To designate utility corridors.

POLICIES:

U 7.1* The maps in this comprehensive plan, which show existing and proposed utility facilities, shall officially designate the location of utility corridors.

GOAL U8.* To encourage community participation in the siting decisions of utility facilities within their community.

POLICIES:

U 8.1* Community input, including responses from affected neighborhood groups, should be solicited prior to City or County approval of private utility facilities which may significantly impact the surrounding community.

GOAL U9.* Avoid potential adverse impacts of vegetation management by utilities.

POLICIES:

U 9.1 City policies require regulations shall continue to require that pruning, trimming, and removal of trees by private utilities shall be accomplished in an environmentally and aesthetically sensitive manner and according to professional arboricultural specifications and standards, while maintaining consistency with utility line clearance needs.

U 9.2* Prior to spraying, trimming, or removing vegetation in City or County right-of-way, notice should be provided to the City or County, as appropriate, and to adjacent property owners.

U 9.3 When the City plants trees in utility corridors, it will choose species that minimize the need for pruning, trimming, and removal. The City will also attempt to influence private property owners to do the same. *(See also the Urban Forestry Chapter.]*

GOAL U10. Encourage consideration of power-frequency magnetic fields.

POLICIES:

U 10.1 The City will encourage the electrical utility to consider incorporating into its utility system design, lines and substations, methods of reducing exposure to power-frequency magnetic fields.

U 10.2 The City will periodically review the state of research on power-frequency magnetic fields and modify policies and regulations, as warranted, based on changing scientific knowledge and/or new State Department of Health policy.

CURRENT FACILITIES - PRIVATE UTILITIES

Puget Sound Power & Light Company

For a more detailed analysis of Puget Power's existing facilities, please see the GMA Electrical Facilities Plan for Thurston County prepared by Puget Power, which is the source for the following inventory.

Existing Electrical Facilities Inventory 1992

1. Transmission Switching Station: a substation consisting of equipment for controlling and monitoring power and flow. It does not include equipment for transforming voltage levels. In Olympia, there is one transmission switching station:

   Plum Street

2. Transmission Substation: a substation which transforms power from 500 or 230 kV to 230 or 115 kV. The lower voltage lines primarily deliver power to distribution substations. In Olympia there is one transmission substation:

   West Olympia

3. Distribution Substations: a substation which transforms voltages of 115 kV or greater to lower voltages of 12 or 24 kV. In Olympia there are seven distribution substations:

   Eld Inlet, Thurston, Valencia, Capitol, Decatur, McKinley, and Johnson Hill

4. Transmission Lines (115kV): a power line or circuit usually carrying voltages of 115 kV or higher. The following transmission lines of this type run through Olympia:

   Olympia-W. Olympia #1 & 2
   Olympia-St. Clair #1 and 2

5. Transmission Lines (Below 115kV): a power line or circuit carrying voltages of less than 115 kV. The following transmission lines of this type run through Olympia:

   Olympia-Plum Street (55 kV)
   Plum Street-Pleasant Glade (55 kV)
   West Olympia-Plum Street (55 kV)
   one line presently de-energized (55 kV)

Washington Natural Gas

WNG's Existing Distribution System 1992

1. Gate stations supply natural gas from Northwest Pipeline Corporation:

   Olympia Gate Station (capacity of 2.2 million cubic feet per hour [cfh])
   West Olympia Gate Station (capacity of 310 thousand cfh)

2. High pressure supply lines provide gas to areas through district regulators. There are approximately 70,000 feet of combined 8, 6, and 4 inch high pressure lines serving the Olympia area. Together these lines are capable of supplying 1.5 million cfh to Olympia.

3. District regulators reduce pressures to typical distribution operating pressures of 25 to 60 pounds per square inch. Distribution pressures are typically called intermediate pressures (IP). There are 50 district regulators within the Olympia city limits.

4. Distribution mains are fed from the district regulators and are typically 6, 4, 2, and 1-1/4 inch diameter lines. There are 170 miles of main servicing Olympia.

5. Individual service lines: individual residential lines are typically 5/8 inch in diameter, while individual commercial and industrial service lines are typically 1-1/4 inch or 2 inches in diameter.

US West Communications

Existing Facilities

1. Central switching offices (COs): the facility where calls are switched. There are two central switching offices serving Olympia. A line exchange grouping, which is identified by the area code and prefix, can carry up to 10,000 numbers. For local calls the CO switches calls in and between the line exchange groups. The COs connects with one another by interexchange trunk lines.

2. Main cable routes: from each of the central switching offices there are four main cable routes generally heading north, south, east and west.

3. Branch feeder routes: connected to the main cable routes are branch feeder routes.

4. Local loops: from the branch feeder routes are thousands of local loops that provide dial tone to every subscriber.

Cellular One and US West Cellular

1. Antennas: There is currently one antenna for cellular phone service located in Olympia. The cellular phone system consists of a series of these low-powered antennas in a honeycomb pattern of "cells" that invisibly blanket the service area. Each cell site has an effective signal radius of only a few miles depending on terrain and capacity demand. As a caller drives from one cell to another, the call is automatically handed off to another cell by a central computer. This central computer also connects the cellular phone transmission with the local telephone company system which completes the call.

TCI Cablevision of Washington, Inc.

1. Receiver site: where towers with antennas and earth station receivers are located to pick up air and satellite signals. Such a central antenna is located in Olympia and serves not only Olympia but surrounding communities as well.

2. Coaxial cables: The cable television system is fed directly by coaxial cable from the receiver site. All of Olympia is served by cable, although, of course, not every household in Olympia chooses to subscribe. TCI Cablevision has wired 191 miles in the Olympia area with 118 of those miles being aerial while 73 miles are underground.

PROPOSED FUTURE FACILITIES - PRIVATE UTILITIES

Puget Sound Power & Light Company

For more in depth coverage of Puget Power's future electrical facilities improvements please see the GMA Electrical Facilities Plan for Thurston County prepared by Puget Power, which is the source for the following planned improvements.

Electrical Facilities Inventory to the Year 2010: Proposed Plans

1. Future Transmission Improvements:

   a. North Olympia 55 kV Conversion

      In order to reconfigure the 115 kV transmission network to serve additional load, the 55 kV system from the St. Clair Substation to the West Olympia Substation will have to be converted to 115 kV. Most of this 55 kV transmission system has been insulated for 115 kV operation. The existing 55 kV substation equipment is very old and replacements are only being purchased for 115 kV and higher voltages. Replacing this equipment will increase the reliability of the system by reducing outage time when the 55 kV equipment eventually wears out. This project would rebuild the remaining one mile of 55 kV line between the Plum Street and the Capitol Substations for 115 kV operation in the future.

b. Hoffman Transmission Station

The Hoffman Transmission Station is being proposed as a five breaker 115 kV station to be built between the cities of Olympia and Lacey. This new station would:

(1) Divide the Olympia-St. Clair #2 and the Olympia-Pleasant Glade 115 kV lines in two, adding capacity and reliability to the resulting shorter line segments.

(2) A new line connection would be built to the Plum Street Station by rebuilding an existing de-energized 55 kV line for a distance of 1.75 miles. This would make the Plum Street Station a four breaker station, adding reliability in the event of a 115 kV line outage.

(3) Add capacity to the 115 kV transmission system in the Olympia/Lacey area.

2. Future Distribution Substations - The following new distribution substations would be needed to serve the forecasted load growth in Olympia:

   a. Brawne
   b. Plum Street (Conversion)
   c. Merryman

Washington Natural Gas

Future Construction

1. Planned for 1994:

   a. The West Olympia Gate Station will be rebuilt to provide additional capacity.

2. Tentative future projects planned for 1994-2000

   a. A 6 inch high pressure line may be built on Delphi Road from 62nd to Mud Bay Road to support growth in the West Olympia area.

   b. A potential 5 miles of 8 inch pressure serving southwest Olympia.

   c. A potential 12 miles of 8 inch pressure from Olympia to Lacey.

US West Communications, Inc.

US WEST Communications (USWC) is planning on building a new broadband telecommunications network capable of providing video, data and voice communications service. The network will carry these multimedia signals over a mix of optical fiber, coaxial cable and copper wire. It will be equipped with sophisticated electronic equipment that will make it easier to diagnose and fix problems. USWC states that it currently provides telecommunications service to Olympia and is committed to continuing to provide state of the art services in the future.

Cellular One and US West Cellular

Unlike other utilities the cellular telephone industry does not plan facilities far into the future but rather analyzes market demand to determine expansions into new service areas. The cellular companies serving the Olympia area do not foresee any new antennas in the immediate Olympia area in the near future.

TCI Cablevision of Washington

The City of Olympia and its Urban Growth Area is adequately served by cable television at this time and will continue to be adequately served throughout the twenty-year planning horizon. The coaxial cable has a practical length limitation of approximately 14-16 miles from the head end in Olympia, which allows TCI to serve all foreseeable customers in Olympia and its Urban Growth Area.